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USSR and Japan: The Sakhalin Oil and Gas Issue

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An Intelligence Assessment

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An Intelligence Assessment

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The authors of this assessment are
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of the Office of Soviet Analysis.
Comments and queries are welcome and may be addressed to the Chief, Strategic Resources Division, OGI,

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This assessment has been coordinated with the National Intelligence Council.

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Key Judgments

Some seven years after the Soviet Union and Japan began a joint effort to tap the offshore oil and gas reserves of Sakhalin Island, the project is in trouble, its success marred by:

- Poor planning.
- Delays in obtaining equipment.
- Most significantly, East-West tensions that led the United States recently to embargo the transfer of some technology critical to the project.

With the current June-through-October drilling season nearly half over, tentative exploratory operations for 1982 are just now beginning. The Soviets and Japanese are falling further behind the original schedule and are still unsure when significant amounts of oil or gas will start to flow. Even so, we believe both partners feel compelled to make the project work—despite continuing delays and US determination to continue the embargo.

For the Soviets, the Sakhalin effort is second only to the Siberia–Western Europe gas pipeline in importance as a multinational energy project. Hard currency is the principal Soviet motivation, although there are also some side benefits for continuing:

- If the project goes through as planned—and US sanctions threaten considerable delays—Moscow stands to earn at least $24 billion in hard currency during the 20-year life of the deal, or roughly one-fourth of the projected earnings from the Siberia–Western Europe pipeline. Indeed, at Sakhalin's peak level of production, expected in the mid-to-late 1990s, earnings could approach $1.4 billion a year.

- As an added bonus, the Soviets view the project as a way of acquiring the offshore experience, equipment, and technology they need to begin intensively exploiting the potentially rich hydrocarbon deposits of the Barents and Kara Seas later in this decade.

- Finally, a successful Sakhalin project would help keep energy supplies in the Soviet Far East statistically "in the black" in the 1990s.

Information available as of 23 July 1982 has been used in the preparation of this report.

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For the Japanese, the reasons for continuing the project are rather straightforward:

- The Japanese have already sunk considerable investment into the project, much of which would be lost if the project were canceled. By the same token, Japan stands to gain a supply of gas at discount prices as well as lucrative Soviet business for its growing petroleum equipment industry if the project succeeds.

- For Japan, knowing that it is the only market for Sakhalin natural gas, participation in the project is an important element to maintaining good relations with the USSR.

- Dependence on imported energy has made Japan anxious to diversify its sources of supply, and nearby Sakhalin Island is a natural choice—one viewed by Tokyo to be at least as reliable as other suppliers.

For all these reasons Tokyo seems determined to proceed with the project even though Japan could obtain all the liquefied natural gas it will need from other suppliers.

We believe that the Soviets and Japanese will move ahead with or without the equipment that is currently being denied by the US sanctions. Rather than canceling the project, the two countries will probably agree to push back the target date for initial production, while the Japanese develop alternative sources of offshore technology. If they succeed, production of commercial quantities of oil and gas could begin in the mid-to-late 1980s.

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Motivations of the Partners

The joint Soviet-Japanese venture to tap the offshore oil resources at Sakhalin Island (figure 1) is similar in many respects to the Siberia–Western Europe (Yamal) pipeline project. It involves the transfer of technology and equipment financed through Western (in this case, Japanese) credits—at below market interest rates—in exchange for Soviet repayment through the transfer of energy resources. In addition, the project, along with the Siberian pipeline deal, is central to Soviet plans for earning hard currency. Moscow can expect to get at least $24 billion [1] from selling half of the oil and all of the gas drawn from Sakhalin's offshore fields over the life of the project—an amount equal to about one-fourth of the projected earnings from the Yamal pipeline over the same period. Indeed, at the peak level of production, expected in the mid-to-late 1990s, earnings could approach $1.4 billion a year. If all the oil were sold, the gain to Moscow could reach nearly $35 billion.

Other advantages will also accrue from the project. Perhaps most importantly, the Soviets want to acquire offshore experience, equipment, and technology that could be extremely useful when they begin intensively exploiting the potentially rich hydrocarbon deposits of the Barents and Kara Seas, probably later in this decade. Soviet personnel are gaining valuable first-hand experience in ocean floor geophysical surveying and drilling, data processing, and offshore-reserves estimating at Sakhalin. They are using the most modern mobile drilling platforms (figure 2), plan to deploy fixed production platforms, and had aspirations of using low-profile subsea multiple-well-completion systems at Sakhalin. The latter two advanced technologies are specially designed for the type of severe weather and icepack conditions found off the Sakhalin coast.

Finally, if successful, the Sakhalin project could help ensure that petroleum production in the Soviet Far East continues to grow through the rest of this decade. Though this region contributes only a small share of Soviet oil and gas supplies, production during recent years has begun to stagnate. On the basis of Moscow's overall energy development strategy, we believe that the Soviets will try hard to avoid declines in oil production in any region—particularly at a time when continued growth in national oil output appears to be in jeopardy.

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Since the late 1970s, virtually all oil-producing regions outside of western Siberia have been showing either no growth or declining output: the Soviets have been able to point to few, if any, successes. Soviet planners have acknowledged that success, even in a relatively minor producing region such as the Soviet Far East, could help reverse the trend and boost industry morale.

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When Tokyo first joined the project in the mid-1970s the Japanese had several objectives in mind, including security of supply. Embassy reporting indicates that Tokyo still views the project as an opportunity to further diversify its sources of liquefied natural gas (LNG). Japan is presently dependent on Indonesia for 45 percent of its natural gas requirements. In addition, Sakhalin is closer to Japan than Alaska, Australia, or Malaysia, and does not pose the same risk of political instability as do Abu Dhabi and Indonesia. Even without subsidized gas prices, Sakhalin would provide Japan with LNG at prices lower than those of many alternative suppliers, since Moscow has demonstrated a willingness to underprice competitors whenever necessary to assure markets for its gas. Moreover, the Soviets view the Japanese as the only outlet for Sakhalin gas. Japan is well aware of this, and has stated that the project is an important element in maintaining stable political relations with the USSR as well as expanding economic ties. The Soviets have increasingly looked to Japan as a source of Western oil production equipment; at least some Japanese industry officials believe the project will bring them additional Soviet orders.

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[1] In 1981 dollars.

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Figure 1
Sakhalin Island Offshore Oil and Gas Deposits

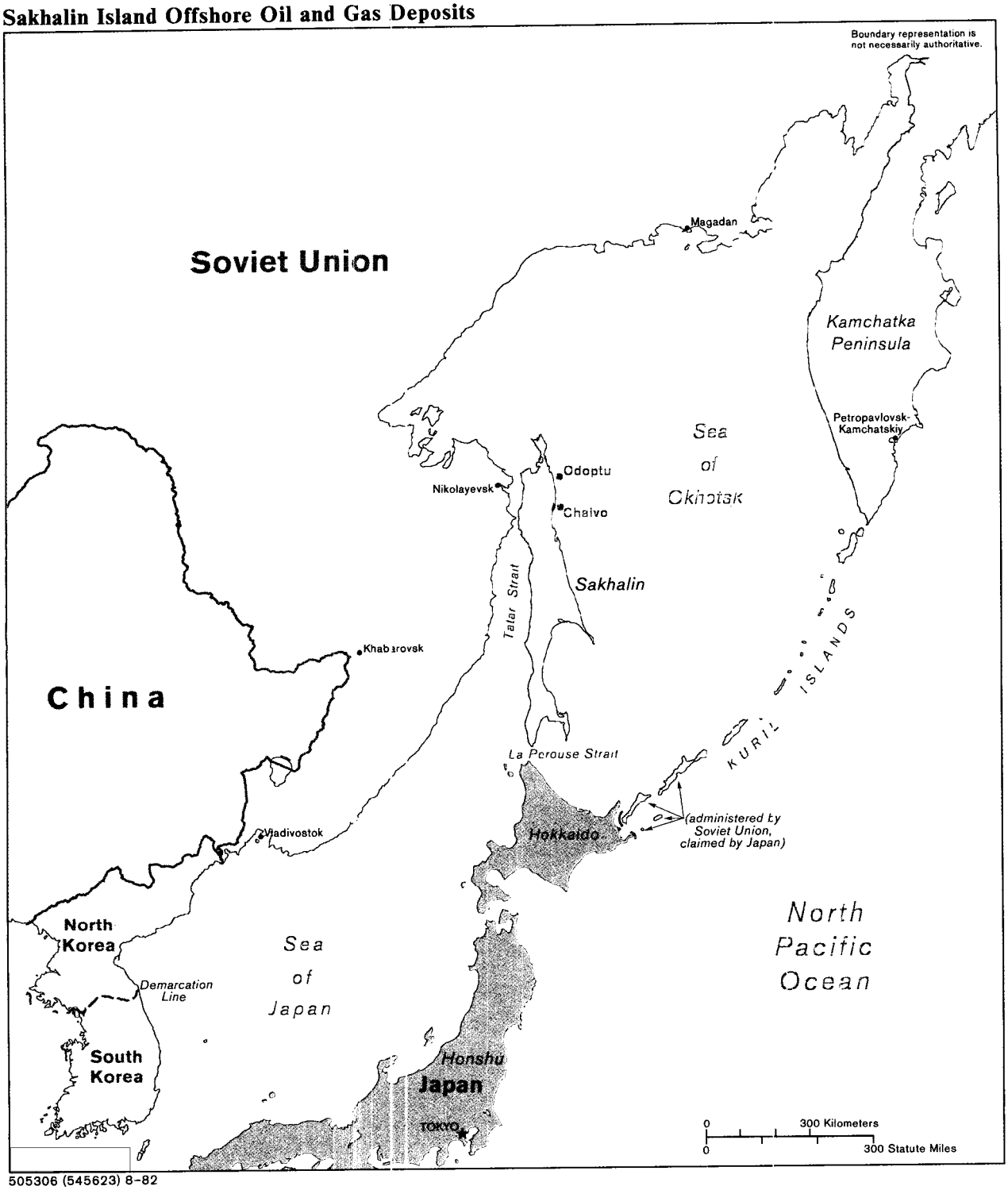

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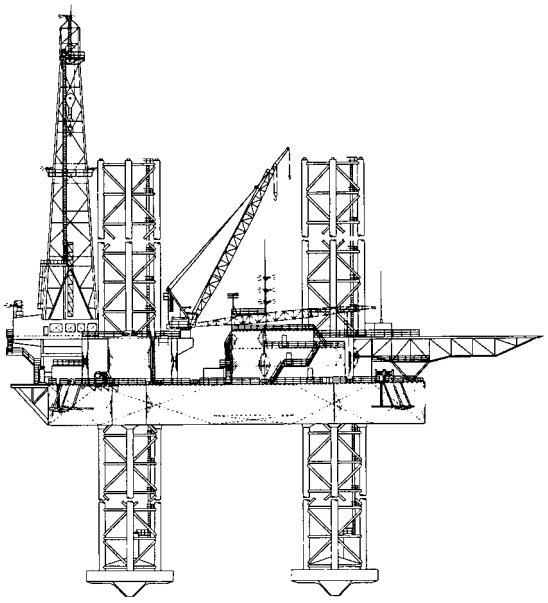
Figure 2

Okha-Type Mobile Drilling Platform

Outboard Profile

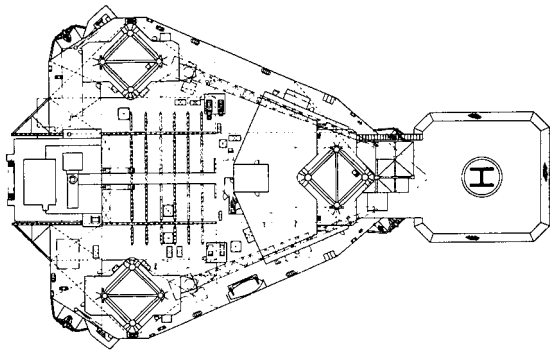


Designed for hurricane conditions in the Gulf of Mexico and for cold region operations.

Up to 91.1 meters water depth.

Licensed by Levingston Shipbuilding Company, USA.

Maindeck Plan



With National rack and pinion jacking system (National Supply Company, a division of ARMCO Steel Corporation).

Source: Mitsui Ocean Development and Engineering Company, Ltd. pamphlet.

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Progress to Date

By any measure, progress on the Sakhalin project has been slow. After several years of sporadic discussions in the early 1970s, the USSR and Japan signed a general agreement for the joint development of Sakhalin's offshore petroleum resources in 1975. The agreement called for SODECO—a consortium of Japanese petroleum and trading companies and one US firm, Gulf Oil—to finance the exploration and development of Sakhalin reserves through credits. In return, SODECO was to receive Soviet oil and gas at preferential prices, 8.4 percent below world levels, to be guaranteed for the first 10 years of commercial production. [redacted] 25X1

Actual work on the project has never matched the pace projected when the agreement was signed. Moreover, exploratory drilling in Sakhalin's waters has yet to yield the hoped for results. [redacted]

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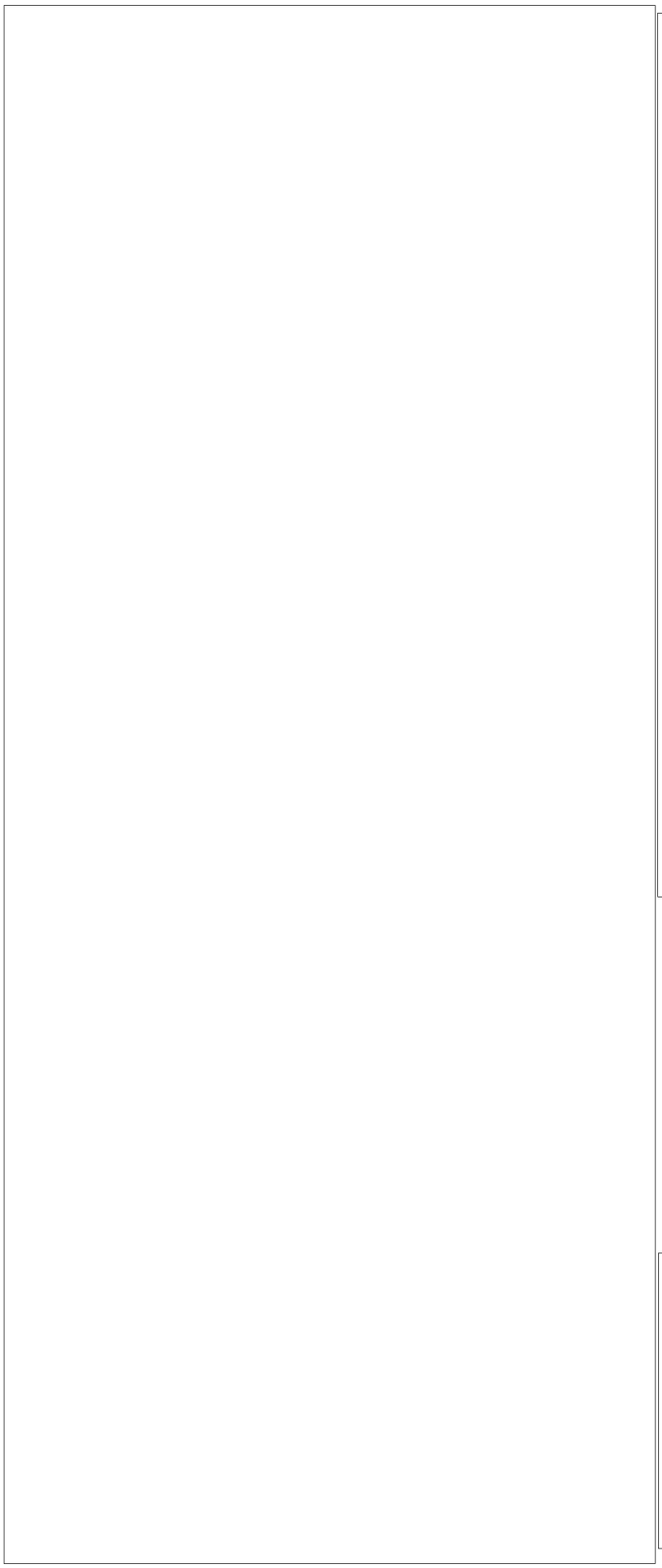

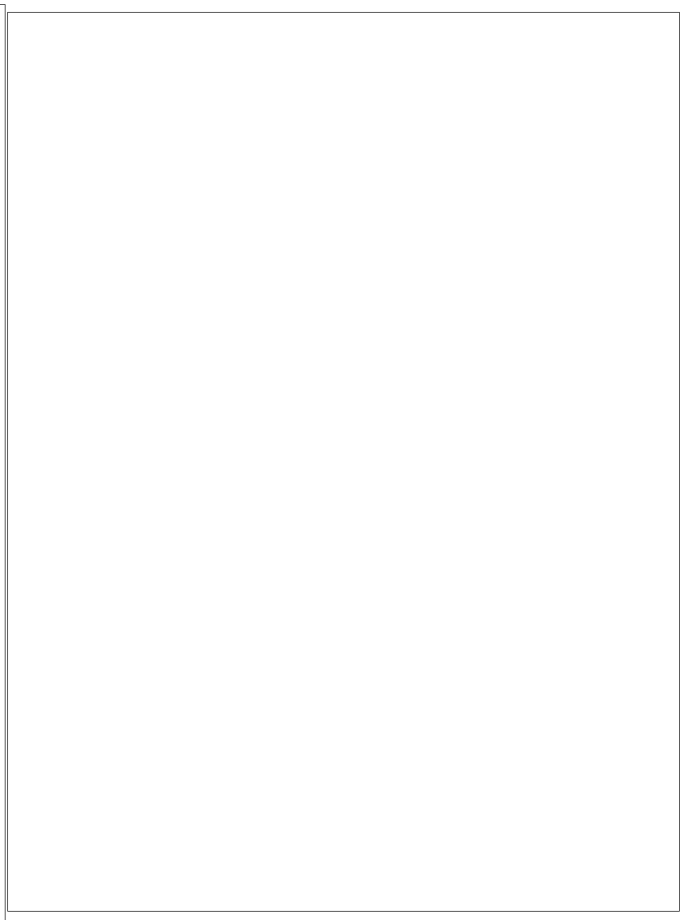

Equipment Requirements

Drilling plans for the 1982 season, intended to delineate further the more complex Odoptu structure and its petroleum reservoirs were shelved temporarily, as a result of US trade sanctions. In late July the Soviet press reported the start of operations using the Soviet drilling rig. Critical drilling and service equipment, spare parts, and consultant services purchased or leased by the Japanese at an expense of some $2 million are currently unavailable because of the embargo.

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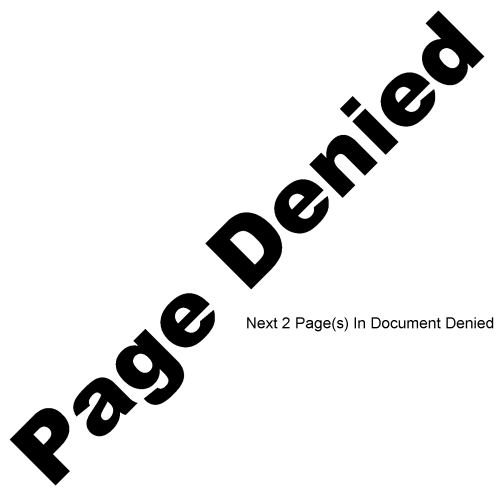

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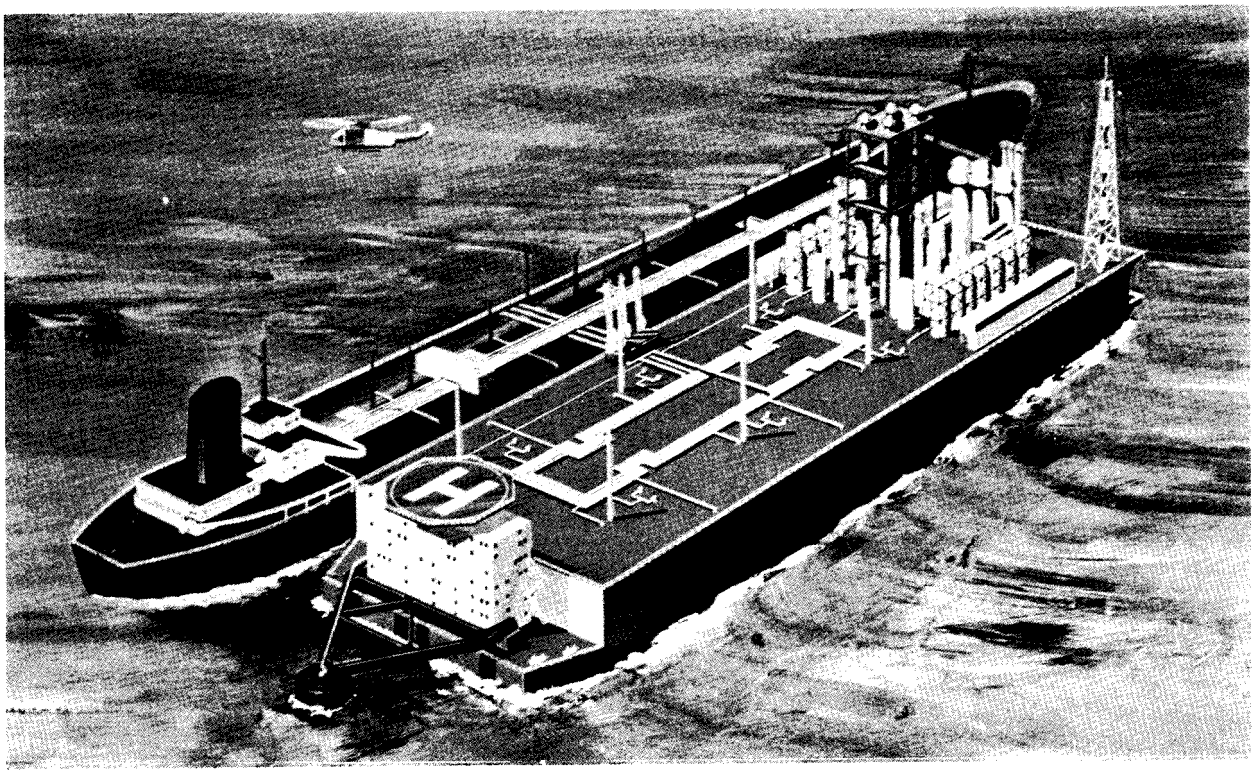
Figure 5

Liquefied Natural Gas Plant of Japanese Design



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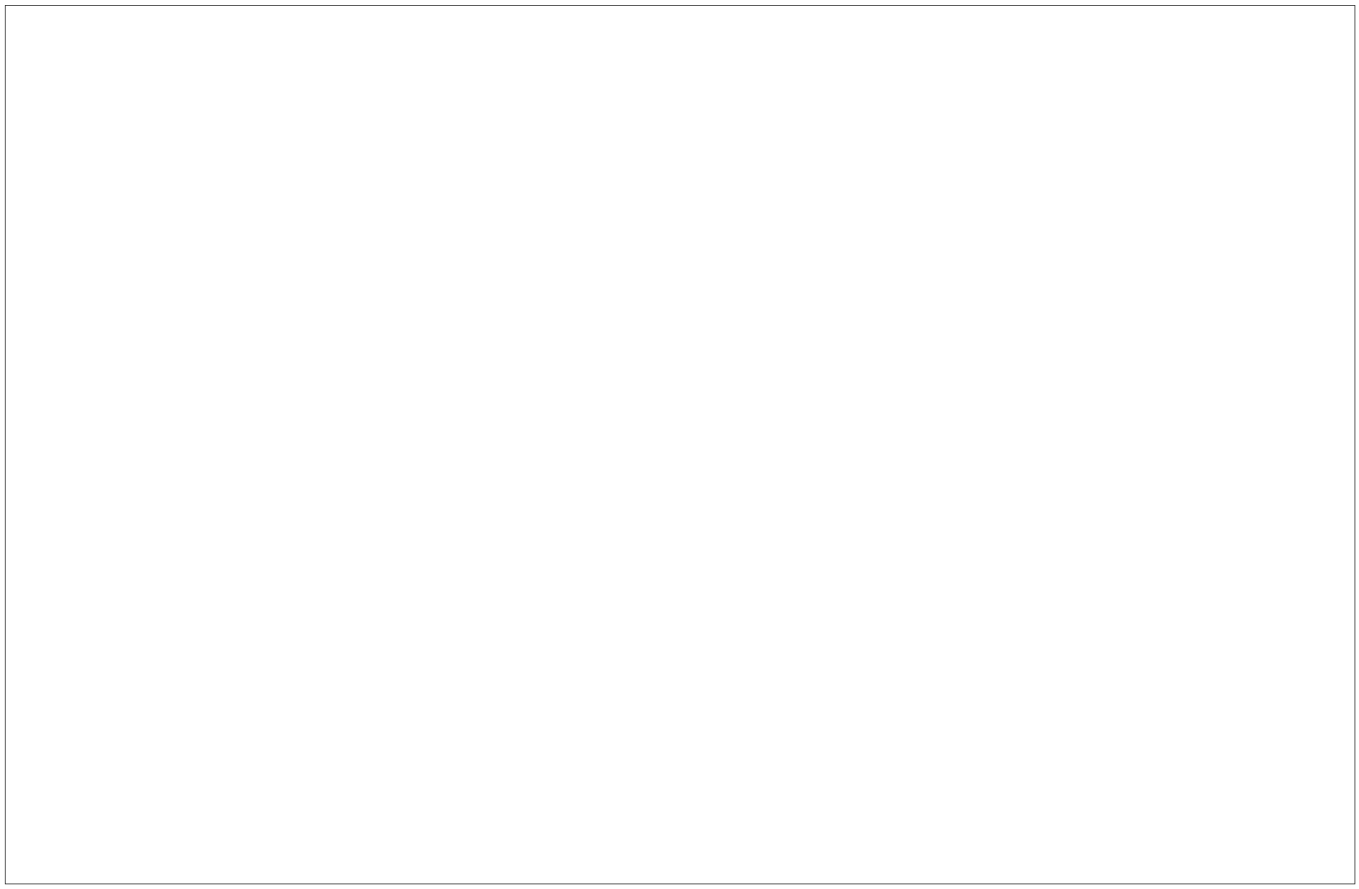

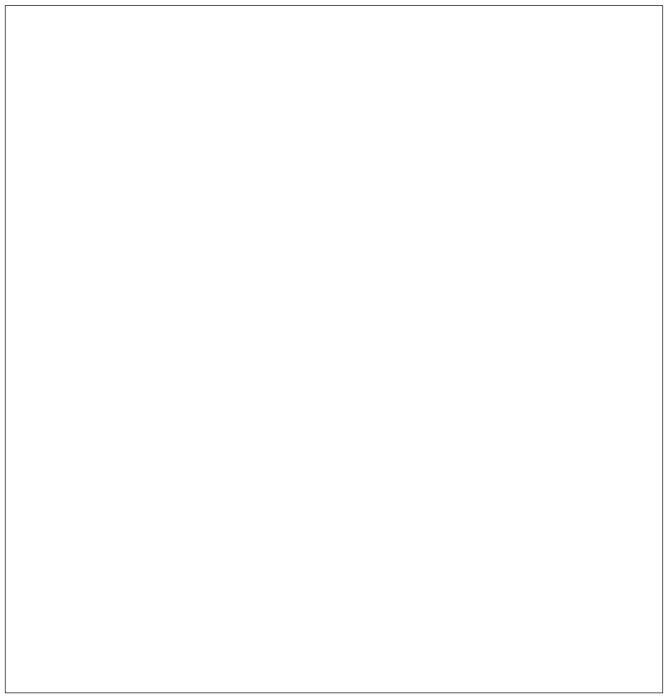

Japanese Gas Requirements

On the basis of Japanese estimates, demand for natural gas in Japan is likely to grow more rapidly than the demand for any other major fuel in the 1980s. Gas requirements, however, will be substantially less than the Japanese were expecting when the Sakhalin project was signed in the mid-1970s. Indeed, projected 1990 requirements have already been sharply pared.

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Government projections of gas demand submitted to the International Energy Agency were reduced by almost 13 percent between 1977 and 1979. Although the most recent forecast of 1990 total energy needs, as approved by the Japanese Cabinet, has been trimmed by some 15 percent, projected natural gas consumption in 1990 is actually slightly higher than was forecast last year. We believe it is unlikely, however, that gas demand will reach the 1.2 million b/doe currently projected by Tokyo.

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The Japanese forecasts assume a long-term economic growth rate of 5.2 percent, significantly higher than the 3 to 4 percent projected by most private and academic forecasters. If these private-sector forecasts prove accurate—as we believe they will—Japan's actual 1990 gas requirements could be several hundred thousand b/doe below current official Japanese projections. All things considered, we think that Japanese gas requirements will probably approach 1 million b/doe by 1990, roughly 200,000 b/doe below official forecasts Current consumption is in the 500,000- to 600,000-b/doe range. Most of the increase in demand is likely to occur in electric power generation since the government is encouraging increased use of LNG in this sector.

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Supply Options

The growth in gas requirements will have to be satisfied by increasing LNG imports. Major suppliers will probably include Indonesia, Abu Dhabi, and Malaysia Potential LNG supplies, including Sakhalin, however, will exceed actual Japanese demand in the early 1990s by more than 20 percent (200,000 b/doe). In other words, the Japanese could do without Sakhalin gas and still meet their needs well into the 1990s (figure 8). Rather than backing off on Sakhalin, however, the Japanese are working to delay alternative development projects:

- Tokyo is already dragging its feet regarding a commitment to Australia's LNG project.
- Qatar's $6 billion LNG project is being delayed because Japanese importers are unwilling to guarantee the lifting of the gas.

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Reaction to Sanctions

Japan has approached the United States—most recently during talks between Prime Minister Suzuki and President Reagan at the Versailles Conference—with the request that the Sakhalin project be exempted from the embargo on equipment and technology to the Soviet Union. In our judgment, the Japanese believe that the project can be completed without US help but recognize that doing so will take more time and cost more money.

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Looking Ahead

The Soviet-Japanese agreement is already at least two years behind schedule, and further delays caused by the continuation of US sanctions now seem likely. The Soviets have the right under the general agreement to abrogate the treaty if the Japanese are unable to meet their drilling obligations. Soviet officials, however, recently assured Japan of their intention to continue with the joint venture; Moscow has already agreed twice to extend the development phase. Abrogation would remove the USSR's only export market for Far Eastern gas. In addition, the Soviets would probably fail to meet goals for Far Eastern energy production and would lose easy access to the Western offshore technology needed for future development of the

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Japan: LNG Suppliers

Abu Dhabi, *presently the only Middle East LNG exporter, has discovered additional natural gas reserves in the Permian Khuff. Although only limited tests of the formation have been made, geologists express optimism that the area will be highly productive. LNG exports to Japan from the project could surpass 5 billion cubic meters (bcm) a year around 1990. Abu Dhabi currently exports 3.1 bcm of LNG annually to Japan.*

Indonesia, *the world's largest exporter of LNG, currently exports about 11 bcm of gas each year to Japan. Construction has already begun on facilities which will nearly double Indonesia's LNG export capacity by 1985. Further expansion of LNG exports is possible in the early 1990s, if the problems of removing large quantities of carbon dioxide from the huge gasfield near Natuna Island can be overcome.*

Malaysia *has sizable natural gas reserves and by the end of this year will complete construction of the first section of an LNG terminal at Bintulu, Sarawak, to export gas to Japan. The project is scheduled to reach full capacity of 9.0 bcm by 1986.*

Qatar's *large gas reserves are concentrated in the Permian Khuff. A $6 billion LNG project to supply Japan with more than 7 bcm of LNG annually, however, is being delayed because Japanese importers are unwilling to guarantee the lifting of the gas.*

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potentially significant subsea reserves in their northern waters. But, in the final analysis, we believe hard currency remains the dominant concern for the Soviets.

Despite the fact that Japanese banking and business interests have already invested almost $200 million of roughly $235 million in credits extended for exploration and anticipate a savings through reduced energy prices, Japan has much less at stake in the project and less to lose by dissolving the general agreement. The project will provide the Japanese with no more than 1 percent of their projected energy needs for the 1990s. Moreover, Japan has only a limited need for Sakhalin natural gas, given the prospects for slower-than-expected growth in domestic demand and the availability of supplies from other dependable sources.

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All this notwithstanding, Tokyo still appears committed to the project, probably because of the financial equities it has already established at Sakhalin and its prospective and potentially lucrative role as a supplier of equipment for the Yamal pipeline and other Soviet oil and gas development projects. In our judgment, the

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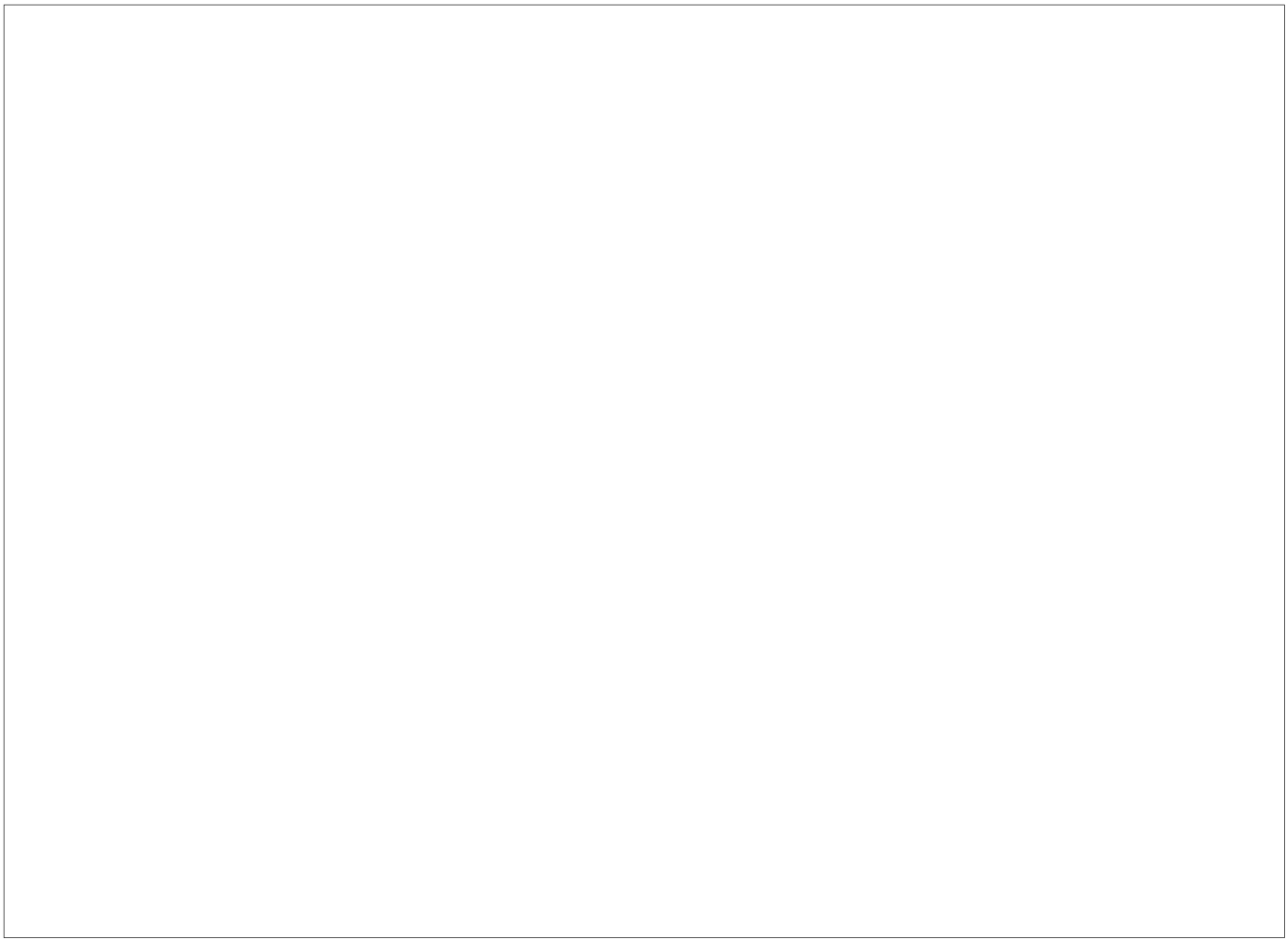

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Japanese also appear to believe that they would lose some face in their dealings with the Soviets were they to back out of the project at this point.

Continuation of US sanctions on critical technology could make Japanese participation extremely difficult and costly. Acceptable alternatives to the sanctioned equipment and licensing are not, in general, readily available. Moreover, Japan views the United States as an important ally, and current trade negotiations with the United States on other matters are too crucial to be jeopardized by detected attempts to bypass the sanctions directly. We expect that, in the near term at least, Japan will pursue a carefully measured course, making every effort to keep the project going by developing alternative supplies of equipment and technology. Although the Japanese have told US officials that they will not violate the embargo, we expect the Japanese to continue to attempt to circumvent it; one approach will be to try to purchase used US equipment from third parties.

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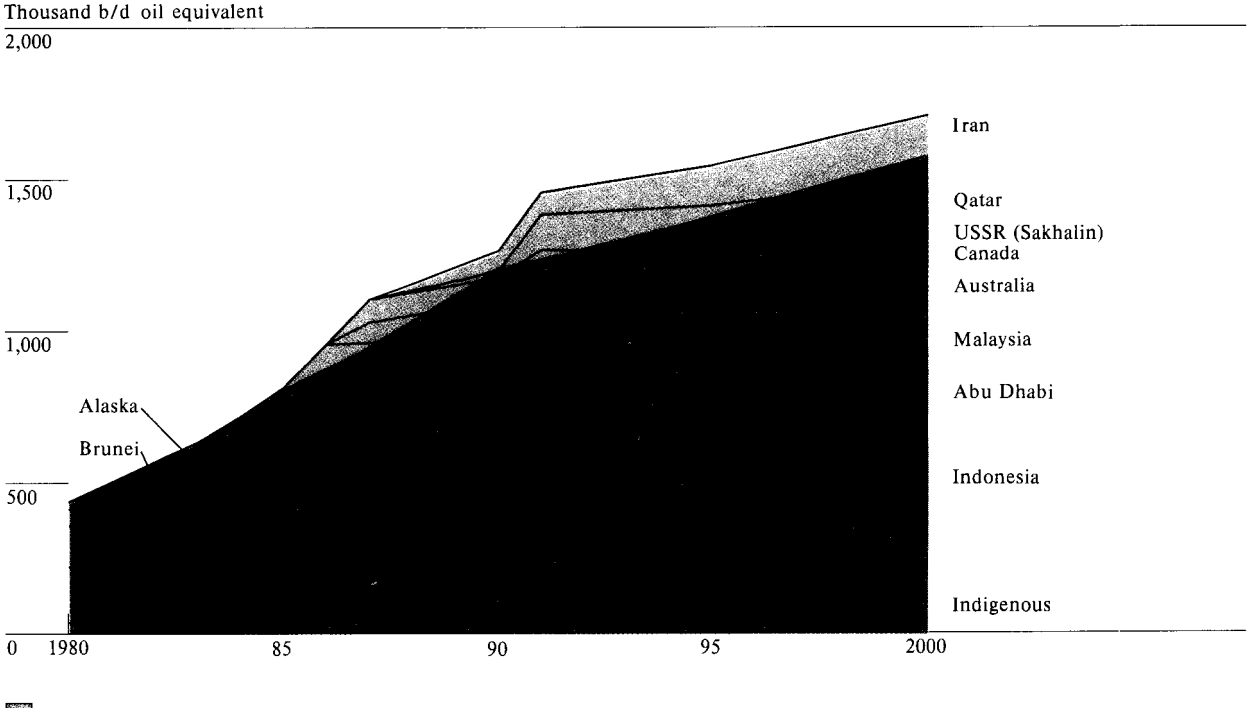
Figure 8
Japan: Natural Gas Supply and Demand Forecast, 1980-2000[a]



[a]Demand forecast based on economic growth projections of 5.2 percent until 1990 and 4.0 percent from 1990 through 2000.

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